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# CLASSICAL WEEKLY

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## BRIEF STUDIES ON SCIENTIFIC TOPICS

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## REVIEWS

DINSMOOR, Observations on the Hephaisteion (*Carpenter*); CLARKE, NAHM, Philosophical Essays in Honor of Edgar Arthur Singer, Jr. (*Holtzclaw*)

## ABSTRACTS OF ARTICLES



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## MEMORANDA

The Washington University Classical News-letter (October 1943, 1) contains a philosophical commentary on Archimedes, inspired by recent events at Syracuse, which is a point of departure for some timely remarks on the difference between ancient scientific attitudes and those of modern times. Other sites prominent in current newspapers provide the bases for other pertinent remarks ranging in subject from Hannibal to the American Army Engineers who used a stretch of old Roman road in Sicily. Lucky is the teacher of school Latin who has this valuable leaflet for supplementing the study of details in every day's lessons.

The first entries for our projected column of Classical Sites in the News come from C. Howard Smith, Dunbar Township High School, Leisenring, Pennsylvania:

The New York Times, October 17, 1943, has an article by P. W. Wilson, "The Appian Road to Rome." Commenting on the Fifth Army's advance along the route of the immortal road, he mentions its builder, the military implications of its construction, its extent, its composition, and its scriptural associations. An editorial note in the same issue says, "The American Way is doing very well on the Appian Way as we go to press. Via Appia, Rome to Capua and . . . Brindisi, has been in the news for twenty-odd centuries. Some of its original bridges are still sturdy enough to bear the weight of Allied artillery, if the harried Heinies haven't blown them up."

The Pittsburgh Post-Gazette, October 4, 1943, headlined the fall of Beneventum, which lies along the Appian Way. Here it was that Horace almost lost a friend to cremation (Satires 1.5.71-6). Pliny tells (N.H. 3.105) that the town, originally known as Maleventum, exchanged this inauspicious name for the more favorable Beneventum.

The history, past and present, of Cos is given in The New York Times, October 17, 1943. Speaking of "crisp Cos lettuce, growing in erect oblong heads," the

article calls attention to the island as the birthplace of Hippocrates, to its reputation as a medical centre, and to its terrain and two important towns, Cos and Cefalo. "Its school of scientific medicine, practicing the beliefs of Hippocrates, was widely known. . . . Its day passed, but the methods of Hippocrates has a vigorous rebirth in the tenth century at Salerno, Italy."

The paper delivered at the Philadelphia meeting of the Classical Association of the Atlantic States May 1 by Professor J. Edward Coffey, S. J. of St. Peter's College is published (in substance, and with extensive documentation) in The Classical Bulletin (20.1-3) for October. Its title, "The Classics in the New Democratic Curriculum," seems even more appropriate in print than when the paper was heard, and some of its statements deserve to be committed to memory, for instance:

There is surely no pedagogical virtue in floundering, even in the perfumed morass of cross-purposes we sometimes mistake for the Elysian fields of Democracy.

Ultimately the one serious complaint we have to register against the new curriculum . . . touches the negative vice of its formlessness. But none of us is inhibited from giving it a form. . .

The classics can animate *any* curriculum, meet *any* democratic need, liberalize *any* academic discipline, transform *any* textbook.

Professor Amedeo Maiuri, lying ill and with one leg broken by a bomb fragment, is quoted in The New York Sun, October 6, as saying that both the Naples Museum and the San Martino Museum were "unscathed." His appeal is underlined by Dr. Margarete Bieber of New York: "Tell my colleagues and all art lovers in America that most of our treasures are safe, and beg them to do something—anything—arrange some kind of an international agreement whereby other antiquities in Italy can be spared." The worst destruction he saw was at Pompeii, while Herculaneum was untouched by bombs. On his cot in a damp room of the National Museum, Professor Maiuri is tragically reminiscent of Professor Zielinski lying ill in a cold room in Warsaw in 1939 (CW 33.170).

## BRIEF STUDIES ON SCIENTIFIC TOPICS

**Microphones and Megaphones in the Roman World**

That man's intellectual power when casting substance into the mould he needs has always created the instruments of progress proves true from the interesting connection between modern and ancient methods of amplifying the range of the human voice. The problem in question Vitruvius puts in his own words in *De Architectura* (5.3.8):

Architecti quæsierunt ut quaecumque vox esset in scaena clarior et suavior ad spectatorium veniret aures. . . Sic ad augendam vocem ratiocinationes ab antiquis sunt constitutæ.

Our theatre, our circus, and our stadium have all retained more or less their original proportions and circular or semicircular forms. Now as before they continue to attract eager audiences, yet, because the total number of their spectators is far surpassed by the vast number of radio listeners, they have ceased to be the chief popularizers of words designed to be propagated. While the modern playwright looks out for new artistic methods and thus runs the risk of growing aimless, the new radio dramatic technique has been created and developed. Broadcast is intended to impress unseen listeners and to appeal to their imagination by means of sound waves which touch the sense of hearing and thus arouse the emotions. For an unlimited audience events enacted on imperceptible stages are perceived with the ears alone, and the eyes are eliminated from the process. Gestures, by-play, costume and make-up, very often more suggestive than the words voiced by the actor, cannot be noticed. In these respects the technique of radio drama and oratory returns to routines familiar to ancient architects.

Let us have in mind some of the general directions which Vitruvius gives. This genial expert and excellent writer who served Julius Caesar as a military engineer and wrote in the reign of Augustus his famous treatise on architecture, dwells in an extremely practical and realistic section of his fifth book (chapters 3-9) on topics concerning the foundation, planning and acoustics of the Roman theatre:

When the plays are given, the spectators, with their wives and children, sit through them spellbound, and their bodies, motionless from enjoyment, have the pores open, into which blowing winds find their way. If these winds come from marshy districts or from other unwholesome quarters, they will introduce noxious exhalations into the system. Hence the site of the theatre is somewhat carefully selected. . . The foundation walls will be an easier matter if they are on a hillside. . . The curved cross-aisles should be constructed in proportionate relation, it is thought, to the height of the theatre, but not higher than the footway of the passage is broad. If they are loftier they will throw back the voice and drive it away from the upper portion, thus preventing the case-endings of words from reaching with distinct meaning the ears of those who are in the uppermost seats above the cross-aisles. . . Particular pains must also be taken that the site be not a

"deaf" one, but one through which the voice can range with the greatest clearness. . . Voice is a flowing breath of air, perceptible to the hearing by contact. It moves in an endless number of circular rounds, like the innumerable increasing circular waves which appear when a stone is thrown into smooth water. . . while in the case of water the circles move horizontally on a plane surface, the voice not only proceeds horizontally, but also ascends vertically by regular stages. . . Hence the ancient architects, following in the footsteps of nature, perfected the ascending rows of seats in theatres from their investigations of the ascending voice. . . 1

The devotion of the builders of the ancient theatres to this problem of extending the range of the voice showed also in their preference for resonant wood, whenever possible, over solid materials like marble which deaden sound. Besides, in accordance with these leading principles they devised a simple mechanism for rendering the voice more intelligible to the human ear. Vitruvius describes *organa aeneis lamminis aut corneis ἡχείους*, made proportionate to the size of the theatre, so fashioned that they produced certain concords when touched by the sound of the voice. Vitruvius (5.4.5-9) identifies harmonious notes produced from the conjunction of sounds (*ex coniunctione sonituum*) called in Greek *φθόγγοι* with the symphoniae of the Greeks. The human voice can modulate them, and there are six intervals in number, called the harmonies of the fourth (diatessaron), the fifth (diapente), the octave (diapason), the octave and fourth (disdiatessaron), the octave and fifth (disdiapente), the double octave (disdiapason). The sounding vessels, which Vitruvius sometimes calls "*vasa aerea*" (5.5.1), have then to be looked upon as the first devices for increasing sound. They were primitive loudspeakers and they functioned by reverberating the voices of actors as a sort of sounding board or sounding box.

Vitruvius continues by saying that these vessels were arranged in thirteen "cellae" and planted between the seats in such a manner as nowhere to touch the stone structure of the seats. *Cellae* means cavities, niches or compartments from its earliest use as 'storerooms' or 'places of concealment.' With an empty space around them and held in place by wedges put beneath them, they were spaced evenly with apertures in the surface of the seats next below. Barely half a foot high themselves, they faced openings two feet long and half a foot deep. These highly effective sound openings reinforced the resonance of the sounding vessels.

These vessels had besides to be arranged in keeping with the size of the auditorium. In theatres of no large dimensions only one horizontal range, halfway up to the height of the top seats, was marked out for the thirteen cavities. It was important in Vitruvius' ar-

<sup>1</sup>Excerpts follow the translation of Morris H. Morgan, *Vitruvius: The Ten Books on Architecture*, with illustrations . . . Harvard University Press, Cambridge 1914.

rangement that there be thirteen vessels to correspond with the thirteen notes in the so-called enharmonic modulation.

L. Mummius, the victorious Roman general and consul of 146 B.C., transported these acoustic devices from Greece to Rome after the defeat of the army of the Achaean League at the Isthmus of Corinth and the complete destruction of the city. However, the Romans, conservative and suspicious as they were, seem to have paid no attention at all to them for many years. Vitruvius could not point to one of the numerous theatres put up and torn down at Rome every year in which these amplifiers were utilized. Most of the smaller temporary stages were made of plain wood and contained a great many *tabulationes* ('boarding'), which naturally added to the resonance of the human voice. Matters of tradition also hindered the adoption of a Greek mechanical device. Theatrical reform was a social problem. A remark of Tacitus (*Annales* 14.10) helps us to understand why the amplifiers were not applied in practice when so well understood in theory. When Pompey set up the first permanent stone theatre, an immense open-air semicircle accommodating 27,000 spectators, he was bitterly scoffed at by the puritanic members of the senate. Although *ludi scaenici* were added to the races as early as 240 B.C. and held merely for purposes of theatrical amusement, never associated with religious ideas or sacred traditions, yet when suddenly an attempt was made to establish theatrical festivals to be repeated in Rome at certain intervals in imitation of the Greek pattern, the senatorial nobles stood up against it. "Spending a succession of days in idleness by having a chance of sitting down . . . the morality of our fathers is forgotten, utterly subverted by the introduction of a lax tone. Degeneration bred by foreign taste is infecting our youth, etc." The reactionaries did not forever succeed. The Roman emperors favored and financed the construction of permanent theatres of dimensions suited to the attendance of the masses.

It is hard to say to what extent the imperial theatres called for installation of the Greek amplifying devices. It is not improbable that the outstanding among them, even without additional acoustic improvements, were of the same perfection as, for instance, the Dionysos Theatre of Athens or the famous theatre at Epidaurus, whose remains prove its acoustic perfection despite the lack of stage background. Wherever and whenever theatres were erected in Italy, Gaul, Spain, Asia or Africa, they were furnished with amplifiers, if financial resources allowed and acoustic qualities required. From lack of means and for cheapness' sake, skilled architects used to content themselves with second-grade amplifiers. Instead of "*vasa aerea*," they employed large jars made of earthenware (*ficilia dolea*) which were similarly resonant and produced excellent results when arranged in the prescribed manner.

Vitruvius' precise description proves that the task of improving acoustic qualities of a theatre fell upon the architects mainly, though not exclusively. It is well known that the whole cast, and among its members chiefly the playwright, for he frequently on account of the scarcity of good actors acted a rôle in his own play, were confronted with acoustic problems. Although the theatrical season was very short, only a few days a year which were assigned for dramatic performances, the manager and stage director (*dominus gregis*) did not risk falling out of public favor. In order to draw and hold large audiences, he had to stimulate the interest of playgoers and to make detailed provisions for an effective *mis-en-scène*. Besides the responsibilities still felt by producers for staging and the technique of presentation, the Roman manager had to take into consideration the enormous dimensions of the open-air setting. It was difficult—if not impossible—for spectators to follow the action, simple as it was, and clearly to understand dialogue. Author, manager and players endeavored to assist the senses. The bright colors of the costumes not only distinguished characters who were on the stage together but contributed (and, I suspect, largely) to the figurative associations which the colors have today. White was the costume of the actor who impersonated the old honorable father, and the concept white still symbolizes old age, innocence, and purity. Yellow costuming characterized the dishonorable, the cowardly, the hussy. In red were dressed the poor and persecuted, while infatuate lovers wore on stage the same motley later associated with the mediaeval court jester. Buskins and socks served likewise to assist the eye.

But the ear did not profit from these visible aids. The sense of hearing, on which intellectual understanding is based, had to be effectively supported, and all the more because the sameness of showmanship, the standardization of setting, the stereotyped costuming, and the monotony of colors could not but pall on the audience. Let us recall that the marble of the scene decoration was always the same, the typical high wall with its three doors always closed the stage from behind. The plays themselves were not distinguished by novelty or variety and were dominated by conventional characters. Flagging interest had to be aroused if the dramatic art were not to die. The modifications made solely for aiding visual appeal were no progress, but rather a resignation. With the intent of titillating spectators' senses the theatre added dances, obscene ballets, display of movements and exaggeration of gestures. Actors became pantomimes, comedy dumb show.

But there were efforts too to deepen the intellectual understanding of the words uttered on the stage. Hearts had to be touched, and spectators had to learn to discriminate and to criticize. Only by an appeal to

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hearing could these aims be attained. Masks were introduced.<sup>2</sup> Whether this happened in the Gracchan period through the agency of Roscius or earlier or later, the use of masks was a great technical change involving functional purposes. They helped spectators to distinguish the characters, made changes of costume simpler, indicated the sex of the personified characters, but above all had to serve as microphone transmitters to render the spoken words of the players more audible for the public. When the shaping of the opened mouth of the mask reached the peak of perfection, an acoustic effect was achieved by spreading the sound in all directions. This was enhanced still more if aided by carefully pitched "vasa aerea."

Once the words were caught by their ears, spectators overlooked deficiencies of scenery, monotony of setting, and lack of realism. Dramatic and realistic scenes of common life could leave the trite and beaten track, and this called for a new type of playwright. Life and reality became the slogan. The kinship between the man in the audience and the man on the stage should be better recognized. Away with all that is contrary to nature, artificial, forced, and affected! But when their novelty wore off, the masks were jettisoned and other novelties introduced. Dialogues degenerated and again became mere dumb show. The great days of Roman drama were the days in which the audiences, with mechanical help, really heard the words of the playwrights. We who live in another period of microphones and megaphones can well appreciate the sense of participation which Roman audiences felt as ear-witnesses of good drama.

BERNHARD FLOCH

YESHIVA COLLEGE

### Homer and Spontaneous Generation

After receiving his new armor from Thetis and before summoning the assembly in which he is to renounce his wrath, Achilles expresses (19.23-7) to Thetis his fears for the body of Patroclus: "I am terribly afraid that meanwhile *flies*, burrowing into (the body of) Menoetius' brave son through the bronze-inflicted wounds, may *breed worms*, and defile the corpse" (italics mine).

It is curious that, so far as I have been able to discover, no editor or commentator has noted the implication of this passage (μῦται . . . εὐλὰς ἐγγείνωται) in connection with the later theory of abiogenesis, or spontaneous generation. Aristotle first formulated the doctrine, and laid it down as observed fact that, e.g., some animals spring from putrid matter, plant-lice from dew settling on plants (Hist. Anim. 5.1.13, 17 et

passim). Most early biologists accepted his views, and it was not until the seventeenth century that the first steps in the scientific refutation of this theory were taken. In 1668 the Italian Redi proved that no maggots were "bred" in meat when flies were prevented by screens from laying eggs in it; gradually more and more evidence of a similar nature was collected. The introduction of the microscope, and particularly the work of van Leeuwenhoek, who discovered bacteria in 1683, helped to complete the refutation of Aristotle's theory and to establish the doctrine 'omne vivum e vivo.'

Thus it would appear that Homer's correct account of the origin of maggots in decaying flesh, implicitly denied by Aristotle's theory, was finally vindicated, after some 2500 years by the fathers of modern science. Others have already noted the superiority of the Homeric age to succeeding eras in many aspects of civilization, such as ethics and morality both public and private, the absence of superstition, the position of women. Here, then, is another point to be added to the score, strangely enough, in the realm of science.

CHARLES JOHNSTONE ARMSTRONG

BROWN UNIVERSITY

### The Etymology of Aphis

The word *aphis*, as the name of a genus of insects commonly known as plant lice, was introduced to modern usage through the Neo-Latin of Linné (Systema naturae 1 ed. 10, 1758, 451).<sup>1</sup> Since that time, the word has had a distinguished career, has been adopted into several modern vernaculars, while scientists have derived from it various new Latin or Latinized forms. Before Linné, its history is very obscure. The word appears to be Greek in origin, but no such substantive is to be found in our standard Greek lexicons.

Speculations about the etymology of the word, such as those of Buckton (Monograph of the British Aphides 1, London 1876, 4-5), commonly assume that Linné coined it from one or more Greek roots, in order to suggest some peculiarity of the insect. For example, the New English Dictionary suggested, very tentatively, that the plural *aphides* was derived from ἀ-φειδής 'unsparing,' referring either to the voracity of these insects or to their reproductive fertility; the singular *aphis* was then formed from the plural by some analogy. Though this etymology and some others are still current (see also E. O. Essig, College Entomology, New York 1942, 331), none of them is very plausible. As a matter of fact, Linné's probable source for the word was brought to light some twenty years ago by A. C. Baker

<sup>1</sup>Though works prior to this edition are not considered under the laws of priority adopted by biologists, Linné first named the genus in his fourth edition (1744, page 93) and species of the genus in the first edition of Fauna Suecica (1746, pages 216 and 387-8).

<sup>2</sup>For a discussion of this problem and further particulars, see C. Saunders, "The Introduction of Masks on the Roman Stage," AJP 32 (1912) 58, and especially B. Warnecke, "Histrio," PWK 8.2116-28.

rangement that there be thirteen vessels to correspond with the thirteen notes in the so-called enharmonic modulation.

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### The Etymology of Aphis

The word *aphis*, as the name of a genus of insects commonly known as plant lice, was introduced to modern usage through the Neo-Latin of Linné (Systema naturae 1 ed. 10, 1758, 451).<sup>1</sup> Since that time, the word has had a distinguished career, has been adopted into several modern vernaculars, while scientists have derived from it various new Latin or Latinized forms. Before Linné, its history is very obscure. The word appears to be Greek in origin, but no such substantive is to be found in our standard Greek lexicons.

Speculations about the etymology of the word, such as those of Buckton (Monograph of the British Aphides 1, London 1876, 4-5), commonly assume that Linné coined it from one or more Greek roots, in order to suggest some peculiarity of the insect. For example, the New English Dictionary suggested, very tentatively, that the plural *aphides* was derived from ἀ-φειδής 'unsparing,' referring either to the voracity of these insects or to their reproductive fertility; the singular *aphis* was then formed from the plural by some analogy. Though this etymology and some others are still current (see also E. O. Essig, College Entomology, New York 1942, 331), none of them is very plausible. As a matter of fact, Linné's probable source for the word was brought to light some twenty years ago by A. C. Baker

<sup>1</sup>Though works prior to this edition are not considered under the laws of priority adopted by biologists, Linné first named the genus in his fourth edition (1744, page 93) and species of the genus in the first edition of Fauna Suecica (1746, pages 216 and 387-8).

<sup>2</sup>For a discussion of this problem and further particulars, see C. Saunders, "The Introduction of Masks on the Roman Stage," AJP 32 (1912) 58, and especially B. Warnecke, "Histrio," PWK 8.2116-28.



in an article (Proc. Entom. Soc. Wash. 23 [1921], 101-3) which seems to have been neglected.<sup>2</sup> Even so, it cannot be said that all the problems connected with the history of the word have been solved.

Baker pointed to the following passage from the well known work on insects by the Italian humanist and naturalist, Ulissi Aldrovandi:

Cimex κόρις, ut dixi, Graecis nominatur, nonnumquam etiam κόρυς. Sed a Dioscoride [2, 36] κόρις οἱ ἀπὸ κλίνης, hoc est Cimices lectularii dicuntur. In glossario [e.g. Corp. Gloss. Lat. 3, 441, 70] in plurali κόριδες etiam invenio, et in Epigrammate Antiphanis [Anth. Pal. 11, 322, 6] κόριες. Recentiores Graeci κοριζα nominant; reperio denique in veteri Lexico Ἄφρις pro Cimice.<sup>3</sup>

Baker did not say so, but it seems altogether probable that Linné borrowed the word *aphis* directly from the Greek word mentioned by Aldrovandi, whose lists of classical synonyms for the Latin names of insects he found useful on other occasions. His choice of a synonym for *cimex* and not *pediculus* or *pulex* (Leeuwenhoek had called these insects *Luysen*; the Germans spoke of *Läuse* or *Blattläuse*, the French of *puçerons*) is explained by the fact that, according to the new sevenfold classification of insects outlined in the fourth edition of the *Systema naturae* and retained to the last, lice and fleas were relegated to the seventh order (Aptera), far removed from the Hemiptera, where the aphides and cimices were placed. But, if *pediculus* and *pulex*, or their synonyms, were ineligible, *cimex* had the merit of denoting another infamous suctorial parasite.

The history of *aphis* can thus be carried back as far as the beginning of the seventeenth century. Moreover, Baker was also able to turn up two lexicons of the sixteenth century which contain the word. In the first of these, published at Paris in 1523, it appeared in two places (presumably as Ἄφρις, *cimex* and, in the Latin-Greek portion of the lexicon, as *Cimex*, ἄφρις). The later, published at Paris in 1554, had this note: Cimex, icis f.g. ἄφρις, ιος I can now add that the gloss, Ἄφρις, *cimex*, also stands in another early lexicon compiled by another distinguished humanist and naturalist, Konrad Gesner.<sup>4</sup> It may stand in still others, and I should be grateful to any reader who has access to early Greek-Latin or Latin-Greek dictionaries if he will take the trouble to inform me of the presence or absence of the word in it.<sup>5</sup>

Baker's third contribution to the history of *aphis* was

<sup>2</sup>I owe this reference to the kindness of my colleague, Professor A. A. Granovsky of the Department of Entomology.

<sup>3</sup>De animalibus insectis libri septem... auctore Ulysse Aldrovando... Bonon. an. 1601; Lib. V, cap. 2, p. 535. References in square brackets have been inserted. Accents are those indicated by Aldrovandi.

<sup>4</sup>I have seen his second edition (Basileae 1545). The first was published at Basel in 1537; see Cohn in Brugmann's *Griechische Grammatik* (ed. 4, 1913), 707.

to infer, from the Ionic genitive indicated in the lexicon of 1554, that ἄφρις was a genuine classical Greek word, possibly used by some medical writer. This conclusion would give the word an honorable pedigree, fitting to its importance in modern scientific and popular usage. It is uncharitable indeed to be sceptical. Yet the word is *adespotum* in all three lexicons. It is not mentioned in the great thesaurus of Stephanus (1572). It does not stand in the dictionaries of Byzantine Greek (Du Cange, Sophocles).<sup>6</sup> It does not occur in Pollux, Hesychius, Suidas, or the *Etymologica*. Finally, the extant scientific and medical writers were searched anew for possible entries in the recent revision of Liddell and Scott, but ἄφρις is not there. It is still possible that the word was used by some writer whose works are no longer extant, but were available in the sixteenth century; but it must be said that this possibility is very remote.

On the other hand, possibilities for error in these early dictionaries can readily be imagined. Words and meanings, when not simply reproduced from previous uncritical compilations, would be drawn from commentaries or translations, or, it may be, marginal glosses noted by some reader opposite the text of this or that author. If the learned authors of commentaries sometimes nodded in their interpretations, and even the best of them had to work with faulty texts and without the detailed and scientifically ordered apparatus which enables modern scholars to detect how unusual a given word or meaning may be, the often nameless editors of early dictionaries multiplied the errors, as later editors complained, and at the same time obliterated their sources.<sup>7</sup>

Readers of the Greek comic poets were and are familiar with such words as φθειρ and κόρις (e.g. in Aristophanes, *Plut.* 537ff.). In the *Ecclesiazusae*, in the

<sup>5</sup>None of the three lexicons seems quite old enough to fit Aldrovandi's description. There is a manuscript Latin-Greek lexicon, now in the library of the Medical College at Montpellier (no. 415), copied by Georgios Hermonynios of Sparta, who lectured at Paris in 1476, which contains in a third column numerous glosses giving modern Greek equivalents. See M. P. Decharme, *Annuaire de l'association pour l'encouragement des études grecques en France*, 7 (1873), 100-13. Decharme noted (113), "A la colonne du grec ancien on trouve quelques mots qui n'ont pas leur place dans le *Thesaurus*." Unfortunately, he adds, they are *adespota*. Still more unfortunately, for our purpose, Decharme saw fit to cite only four of these, and *aphis* is not one of them.

<sup>6</sup>I thank Professor A. S. Pease of Harvard University for the information that the 1936 *Mega Lexicon* contains this word, but only as a modern technical term.

<sup>7</sup>A modern analogy is supplied by one of the editors of the *New English Dictionary*. The novel word *litie* was once submitted for entry, with an illustrative citation, transcribed from a source old enough to have the long *s*: *the barbarity and inside litie of the Turks*. See F. W. Hall, *A Companion to Classical Texts* (Oxford 1913), 173. For an instance in which mediaeval commentators were forced to guess at the meaning of a word which modern conjecture has removed altogether from the text, see Liddell-Scott-Jones, *s.v.*



course of a stream of abuse cast by a young woman at an old hag, occurs the line (909):

*καὶ τῆς κλίνης ὄφιν εὖροις καὶ προσελκύσαιο.*

It would certainly be a shameful end of our quest if a misinterpretation, followed (or preceded) by a misreading of the word ὄφιν in this line, had resulted in the gloss, *Cimex aphis*, which subsequently found its way into sixteenth-century lexicons, was reproduced by Aldrovandi, and from him was Latinized by Linné. Though mediaeval scholiasts and modern commentators have been puzzled by the connotations of ὄφιν in this line, I can find no trace, in the modern editions available to me, of such an interpretation, or of such a corruption. I should be very grateful to anyone who has access to the readings of the six extant manuscripts containing this passage, some of them with scholia, or to early editions of this play,<sup>8</sup> or to any work of the early Renaissance, such as the sixteen volumes of *Antiquae lectiones* by Ludovico Ricchieri of Rovigno (Caelius Rhodiginus), first published in 1516 and often reprinted, which might record such readings or glosses in a form suitable for excerpting by the compilers of dictionaries—I should be grateful if he can find evidence confirming this conjecture.

On the other hand, I should be immensely relieved if a better etymology for the word *aphis* can be suggested.

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### Precious Stones and Mediaeval Symbolism

It is well known that symbolism played a large part in mediaeval literature. In the *Psychomachia* of Prudentius, the most classical of Christian poets, mediaeval authors found a rich source of ideas that could be developed allegorically (Wright and Sinclair, *A History of Later Latin Literature* [New York, 1931], 30). In the works of such authors as Theophrastus, Pliny the Elder, Solinus, and Isidore of Seville, they were to find much material about natural products that could be applied to particular points of human life. Precious stones were often looked upon by the Middle Ages as figuring importantly in this connection. One of the best works on the subject that have come down to us from the mediaeval period is the *Liber Lapidum* of Marbod of Rennes.

The author was born at Angers about 1035 and died in 1123 (Manitius, *Geschichte der lateinischen Literatur des Mittelalters* 3, 719ff.). His varied career brought him the successive duties of scholar, poet, chancellor, master of a school, archdeacon, and finally bishop of Rennes. His renown as a poet in his own day was second only to that of Hildebert of Lavardin (Raby, *Secular Latin Poetry*, Oxford 1934, 1.329); besides his

*Liber Lapidum* he composed a work on the teaching of versification, *De ornamentis verborum*, poems on the legends about various saints, occasional verses addressed to prominent figures of his day, *Liber decem capitulorum* (in which he refers to lighter works of his earlier life), and a few minor poems (Migne, PL 171.1465-1784).

The *Liber Lapidum*, the most famous of all the works of Marbod, is a didactic work in hexameter which describes the special powers of about sixty different stones, both natural and magical. It is intended to explain:

*quot species lapidum, quae nomina, quive colores,  
quaevae sit his regio, vel quanta potentia cuique.*

But this is only for the chosen few:

*nam maiestatem minuit qui mystica vulgat,  
nec secreta manent, quorum fit conscia turba.*

By this poem, Marbod wishes to uncover many secrets of nature, and to advance the science of medicine by showing how precious stones have the power to repel disease. The work attained great success immediately. Translations were soon made into French, English, Italian, and Danish (Raby, 1.332).

The poem is full of the strangest beliefs, and is thoroughly permeated with symbolism. Selections are here given to illustrate the power which the mediaeval imagination could ascribe to certain stones.

The agate strengthens him who bears it and improves his complexion:

*portantem munit viresque ministrat Achates  
facundumque facit gratumque bonique coloris.*

The sapphire soothes excessive perspiration, ulcers, and disease of the eye, provided the bearer lead a pure life:

*sed qui gestat eum castissimus esse iubetur.*

The onyx, if tied to the neck or placed on the finger, gives shape to nocturnal spirits and to every sadness during sleep:

*at collo suspensus onyx digitove ligatus  
in somno lemures et tristia cuncta figurat.*

The beryl brings to its bearer relief from belching and sighing:

*... ructatus simul et suspiria tollit.*

The carnelian should come in handily at the distribution of rationing-books, for

*in disceptando surgentes mitigat iras.*

The alectoria must have been eagerly sought after, especially by mediaeval knights, since it contained such powers as these:

*invictum reddit lapis hic quemcumque gerentem,  
hic oratorem verbis facit esse disertum,  
constantem reddens cunctisque per omnia gratum.*

In these days of transoceanic travel, the emerald would be a welcome gift to the sailor:

*et tempestates avertere posse putatur,  
fertur lascivos etiam compescere motus.*

Those afraid of shipwreck or torpedoing should carry the topaz, which

*ferventes etiam compescere dicitur undas.*

<sup>8</sup>Dr. Thorsten Peterson has had the kindness to report, negatively, on three editions in the Princeton University Library: Venice 1498 (ed. princ.); Basel 1547; Geneva 1607.

Chrysolite bids for a place in voodoo:  
 daemones exterret et eos agitare putatur.  
 trajectum laevo decet hunc portare lacerto.

For those troubled by witches and enchantments, the jet is recommended, which  
 vincit praestigia et carmina dira resolvit.

The hyacinth, in its various forms, may be used for those who are in need of strengthening or who are troubled by sad or suspicious thoughts:

confortative cuncti virtutis habentur,  
 tristitiamque fugant et vanas suspiciones.

Lunacy loses its power when confronted with the swallow-stone:

cedit gestato lunatica passio rufo.

For blackouts, the Middle Ages were fortunate in possessing the carbuncle:

huius nec tenebrae possunt extinguere lucem.

In all these examples we see how credulous Marbod could be. But there is a more attractive side. He is also the author of a brief rhymed work in accentual iambic dimeter which constitutes what Rémy de Gourmont calls (*Le Latin Mystique*, Paris 1912, 211) a treatise

on the interpretation of the Christian Lapidary. This work, which explains the meaning of the precious stones mentioned in Apocalypse 21.18-9, contains just as much of symbolism, but less of credulity. Lest this article reach undue length, only the stanza about the chrysoprase is given here:

Chrysoprasus purpureum  
 imitatur concilium.  
 Est intertinctus aureis  
 miscello quodam guttulis:  
 haec est perfecta charitas  
 quam nulla sternit feritas.

Marbod was far from being the only author to discuss the meaning of precious stones. Other authors arranged correspondences between the stones of the Apocalypse and the choirs of angels. Others paralleled various stones with the virtues of individuals, particularly the Blessed Virgin Mary. Others arranged similar correspondences between various stones and the Apostles.

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To the Editor of CLASSICAL WEEKLY:

Inasmuch as a disproportionate number of errors—for a communication of only two and one-half pages—appears in the review (CW 36.127-30) of *An Economic History of Athens under Roman Domination*, various corrections of its statements are required. I confine myself to matters of fact.

It would have been easy to find out that in rebuilding the stadium, Herodes Atticus did *not* exhaust the quarries on Mt. Pentelikon (Pausanias; Day 197, 204), which incidentally provided marble for an admirably exact reconstruction following the plan of Herodes' work in precise detail, for the Olympic games of 1896: the best piece of reconstruction in modern Athens, and a fine monument to the most conspicuous figure in Day's book.

In no place did I state that the quarries on Pentelicos were exhausted. On page 204 I wrote: "In any event, the widely held view that Herodes Atticus owned the quarries on Pentelicos is not susceptible of proof, for it is based upon a passage in Pausanias,<sup>169</sup> which states merely that the greater part of the Pentelic quarries was used up in the reconstruction of the Panathenaic Stadium at Athens by Herodes . . ." On page 197 I wrote: "In carrying out the work of rebuilding the stadium, if we may believe Pausanias,<sup>117</sup> the greater part of the quarries on Pentelicos was exhausted." The import of my language is perfectly clear: the *greater part* of the quarries *then being worked* on Pentelicos was, according to Pausanias, used up in the ancient reconstruction of the stadium. Moreover, the import of Pausanias' language is perfectly clear. Note especially the fact that he locates (1.19.6) the quarries in question at Pentele (Πεντελῆσιν) and on no other part of the mountain. But, to continue, it is a pretty and dramatic picture, of the stadium rebuilt in modern times, following the precedent of Herodes, with marble

drawn from the quarries used in the time of Herodes. Unfortunately, however, it is a picture not supported by facts, and the error should not be permitted to gain currency. The facts concerning the marble in the modern stadium are as follows. The reconstruction of the stadium was begun in 1896 and continued through the succeeding ten years. In 1901 A. Cordella, the official Greek engineer in charge of mines, reported<sup>1</sup> that the "ancient" quarries on Pentelicos were no longer worked. This is a slight hyperbole, but it was corrected in 1902 in the report of the British Consul at Athens, from which we learn that the "ancient" quarries were worked only "in a small way," that most of the marble quarried at that time came from the north side of the mountain and from the western end of the south side, and that the English company, Marmor Limited, which then operated the Pentelic quarries, delivered in 1901 the amount of 1625 cubic meters of white Pentelic marble for the rebuilding of the stadium.<sup>2</sup> Further substantiation of these statements comes from Mr. Harry Hill, the manager of the American Express Company in Athens, to whose extensive knowledge of modern Greece almost every American who has visited

1A. Cordella, "Das Berg-, Hütten- und Salinenwesen Griechenlands," in *Zeitschrift für das Berg-, Hütten- und Salinenwesen* XLIX (1901) 351-82, especially 358 and 380; cf. the summary of this article, entitled "The Marbles of Greece," as translated by The Quarry of London, published in the magazine *Stone* XXIV (1902) 23-9. As usual, the original is to be preferred to the translation.

2See the résumé of the British Consular Report, entitled "More About the Grecian Marbles," *Stone* XXIV (1902) 449-52, especially 450 and 452. It is a commonplace, known to almost all students who have resided in Athens and to many tourists, that there are both "ancient" and "modern" quarries on Pentelicos. One may consult, for instance, his Baedeker, which has a fairly exact statement concerning these quarries;

Athens in recent years is indebted. He has very kindly written to me in a letter dated May 4, 1943:<sup>3</sup>

My father, Arthur Hill, was the Director of the Marmor Limited in 1901 and signed the contract supplying the marble for the Stadium. It is my impression that all the marble came from the north side of Mt. Pentelicus. It has only been in recent years that the quarries on the south side have been opened. I do not think that any of these quarries were worked in ancient time.

The review also says:

Day speaks merely of the "budgetary system" as inadequate (36, 54, 89-90, 107; index incomplete on this). The phrase is misleading: there was no budget whatever in anything like our sense of the word: see now H. Michell, *op. cit. infra*, 355.

On Michell's page 355 (where the author followed A. M. Andreades, *History of Greek Public Finance*, I, 365 [English translation by C. N. Brown, Cambridge 1933]) one finds that the Athenians did not have a "unified single budget" but that "they did have what essentially amounted to a budget," that they had actually "a number of budgets." One also observes that Professor Michell places the following heading (also on page 355) above the discussion to which the review refers: "Athenian Public Finance: The Budget." If, then, it be granted that the Athenians had "a number of budgets," what legitimate fault can be found with the expression "budgetary system"? To add to the cumulative evidence of carelessness on the part of the reviewer, it was on page 54 only (of the pages cited) that I used the expression "budgetary system." On pages 36 and 89-90 I used the words "fiscal system." No exception can be taken to this expression on the ground that the Athenians had no budget. On page 107 I wrote: "... chronic inefficiency in matters of taxation and administration of public finance." Certainly, no objection may be raised against this statement on the ground that the Athenians had no budget. A further error in this connection may be pointed out. The title of H. Michell's book is cited as "Economic History of Ancient Greece," whereas the correct title is *The Economics of Ancient Greece*.

and numerous other accessible books provide satisfactory accounts. The "ancient" quarries are on the south side of the mountain, near the monastery of Mendeli. The more important "modern" quarries are on the northern side of the mountain, near Dionysio, and at the western end of the south side, west and northwest of the "ancient" quarries. Cordella (358) states that marble from the quarries at Vathyrevma (west of the "ancient" quarries, and about 4 kilometers east of Cephissia) was used in most of the new buildings in Athens and the Piraeus, and that marble from Dionysio was used in the restoration of the Parthenon.

<sup>3</sup>Mr. Hill goes on to say that absolutely exact information might be obtained from Mr. Thomas Bowman, the present owner of the Pentelic quarries, who is now in Cairo, Egypt. In view of the facts that the information at hand is already exact and that a reply from Mr. Bowman would probably be delayed by the present condition of communications, it has seemed advisable that this statement be submitted without that addition.

Doubtless the state's finances could have been, according to our standards, better handled; but because some leading citizens subscribed money for repairing "the [missing] and the tower" (I.G. II<sup>2</sup> 2331), Day hastily exclaims (36) that "The state treasury could not even maintain the defenses of the city!" Perhaps; but even in the generation after its all-time low, the city was minting tetradrachms so fast that Flamininus could make off with 84,000 of them (= 56 talents; 35).

The sentence immediately preceding the one to which the review refers reads: "A further indication of the dominance of this coinage [i.e. the Athenian New Style coinage] is to be observed in the fact that coins of the same standard, but issued by another authority, were at times listed as 'Athenian tetradrachms.'"<sup>42</sup> Note the fact that "Athenian tetradrachms"—in quotes—were the two words immediately preceding the sentence fastened upon by the reviewer. Then follows the sentence to which reference is made in the review: "In the list of booty that adorned the triumphal procession of Flamininus at the end of the Second Macedonian War we find mention of 84,000 Athenian tetradrachms, but of no Macedonian silver coins." Then observe the two sentences immediately following: "Likewise, in the list of the booty carried in the triumphal procession of M. Fulvius Nobilior at the end of the Aetolian Wars (192-189 B.C.) mention is made of Athenian tetradrachms and of Philippei, but not of Aetolian coins. In each case it is likely that other coinages were lumped together with the Athenian coinage under the term 'Athenian tetradrachms.'" The import is perfectly clear: these 84,000 coins were probably many, if not all, Athenian tetradrachms only in name; they were so named because they were minted after the standard of Athenian tetradrachms, but not by the Athenian mint. This is the opinion of other scholars as well.

As regards my theory concerning the gifts the Hellenistic kings bestowed upon Athens, note the following statement in the review (*italics mine*):

Their motive, according to Day, was not sentiment—neither a desire for glory nor support at home—but rather a desire to gain Athenian trade.

On page 41, after referring to the two explanations given above in *italics*, I wrote (*italics added here*): "It is very difficult, however, to believe that the kings were swayed so greatly by mere considerations of sentiment. Consequently, *while the two explanations just set forth above may be partially valid*, a third seems to be even more to the point." I doubt very much that the reviewer has expiated his error when some sentences later he writes:

There was trade, and probably the monarchs were interested in it; but if that had been their prime object. . .

Finally, note must be taken of another statement in the review:

Inscriptiones Graecae and many other epigraphical works are omitted from the (hasty?) Bibliography, which also lacks A. Andreades, *Tarn on the Hellenistic Age*, the *Cambridge Ancient History* and all articles except a few.

The *Cambridge Ancient History*, *Inscriptiones*



Graecae, and the other epigraphical works to which I made frequent reference are given in my List of Abbreviations on page ix. When I refrained from mentioning these works a second time in my Bibliography, I followed the established editorial practice of one of the leading university presses. Moreover, the works in my Bibliography were cited "for the purpose of relieving the notes of the encumbrance of frequent repetition of bibliographical data" and not for the purpose of providing the reader with a complete bibliography. (See the Introductory Note to the Bibliography on page 281). Tarn's chapter in *The Hellenistic Age* was not cited because later and more complete works, with full bibliographical citations, were referred to in the notes. As to the omission of Andreades, the reader will ob-

serve that that book deals most explicitly with pre-Hellenistic times. A later volume was projected to deal with the Hellenistic period. At another point the reviewer censures my failure to mention J. Hasebroek, *Trade and Politics in Ancient Greece* (English translation, London 1933). That book, also, deals most explicitly with pre-Hellenistic times. Both books, therefore, treat periods that do not fall within the compass of my book. It is well, in this connection, to read Hasebroek's comments (vi) with regard to the faulty conclusions occasioned in the field of ancient economic history by the failure to exercise caution in the correlation of evidence from different periods.

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## REVIEWS

**Observations on the Hephaisteion.** By WILLIAM BELL DINSMOOR. 171 pages, 76 figures, frontispiece. American School of Classical Studies, (Princeton) 1941 (*Hesperia*: Supplement V) \$5

Until recently the "Theseum" in Athens had hardly been given the professional architectural attention which befits the best preserved of all Greek temples. But when the American excavation of the Agora drew it into its field of operations, it was the building's good fortune to gain the attention of two seasoned and expert excavators (Dr. and Mrs. Homer Thompson) and a master of architectural analysis; and these have put it under a scrutiny such as not many ancient structures have undergone. The outcome is not a new and complete publication of the temple, but an elaborately detailed presentation of the results of the American excavations around, within, and underneath the visible structure.

Whoever has smarted under the inadequacy of by-gone excavational records will realize that here for once it will be impossible for the future to bewail the golden opportunities neglected by the digger. Whatever could be reached and examined in, on, and under the Hephaisteion in the late 30's of the twentieth century is now safely between the covers of this book. It would be rank ingratitude of the reviewer to remark that this does not make for unflagging interest and sustained readability; but it would also be a dereliction of duty in him not to warn his public that there is more exciting reading to be found elsewhere in the annals of the archaeological profession. This is a publication outstanding for the extraordinary amount of its minute information about a single building, gained by observation and inference and imparted by word, drawing, and photograph, to produce a monograph which will remain a source comparable to the temple itself for all subsequent study and discussion. From the

welter of linear measurements and calculations several inferences emerge of critical import for the understanding of the architecture. A brief compilation of these will perhaps best impart an idea of the book's contribution and originality.

The author assumes as adequately proven the identification of the so-called "Theseum" with the Hephaistos Temple of ancient record and devotes no space to its further argumentation.

"The existence of interior columns is confirmed, not by any surviving fragments of the columns themselves, but by a length of epistyle of Pentelic marble found by Orlandos in the modern east wall of the church in the course of his reconstruction. . . . Its true nature was first ascertained by Thompson after the discovery of the inner column foundations two years later."

"Without any doubt we are to restore two storeys of Doric colonnades" (*sc.* in the interior), and "the height of the lower storey can be determined with perfect accuracy." "There were no formal antae; the epistyles simply abutted against the wall."

The use of stippling to carry a stucco coat and strips of molten lead to insure complete waterproofing of the joints are noted on the interior of the cella walls. "As for the interpretation of these extraordinary precautions . . . the conclusion is unescapable that they were intended in connection with mural compositions painted on stucco." "In spite of the fact that the walls are of marble and so would not actually have required stucco as a background for painting, we may assume that the use of stucco was planned here in order to avoid the danger of having the mural composition broken up by the ashlar pattern of the masonry." "On the other hand, the absence of any literary allusion to such paintings in the Hephaisteion, and the failure to discover any actual traces of ancient stucco below that of medieval times or elsewhere, suggest that such mural compositions may never have been executed."

The excavations have shown that the temple was not set to crown the hill above the Agora, but "planted on its northwestern shoulder" upon a steep slope of rock. There is no indication that the temple ever had a predecessor on this site; in fact, "it is now clear that no substantial building could have preceded the familiar temple on the site." "We have found evidence for an earlier sanctuary of Hephaistos only in the charred deposit on the earth which implies that there was something inflammable on this site at the time of the Persian occupation, and in the potsherds antedating the temple and of a quality which suggests that some of them, at least, are remnants of dedications."

"The excavations have provided a certain amount of external evidence for the date of the present temple, a welcome supplement to the stylistic criteria on which scholars hitherto have been obliged to rely. The new material comes from the undisturbed earth filling and rubbish deposits both inside and outside the temple, and contemporary with its erection." Working chips and materials from the construction of the temple and fragments of pottery, terracotta moulds and figurines found along with them, combine to show that the building must have been undertaken about the year 450 B.C., even though it is known that the cult statue-group of Hephaistos and Athena which stood within the cella was not produced until the period between 421 and 415 B.C. By combining the direction of the temple axis with the presumable day of the festival of Hephaistos, the author would even bring astronomical pressure to favor October 17, 449 B.C. as the actual official date of inception of the building.

The architect of the temple was the same as that of the temple of Ares in Athens and the temples at Sounion and Rhamnous. Dinsmoor has already treated him in *Hesperia* 9 (1940) 44-7, but adds some further pertinent observations here.

RHYS CARPENTER

BRYN MAWR COLLEGE

**Philosophical Essays in Honor of Edgar Arthur Singer, Jr.** Edited by F. P. CLARKE and M. C. NAHM. x, 377 pages, frontispiece. University of Pennsylvania Press, Philadelphia 1942 \$3.50

This is a series of twenty-one essays by associates and former pupils of Professor Singer. The book is divided into four parts, containing nine essays in the first part on methodology and science, three in the second part on ethics and religion, four in the third part on aesthetics, and five in the last part on the history of philosophy. Most of the articles are by pupils of Professor Singer and show interesting applications in various fields of Singer's rigorous logical method and empirical outlook.

It is difficult for the reviewer to select any special essays for attention, since all are on a high level. However, the following seem worthy of mention. In the first section, there are two excellent biological articles, attempting as clear and logical a definition of "life" as is possible. They perhaps agree a little too closely in material and argument, but are well worth reading. The psychological essays are also interesting, particularly that of Guthrie on the conception of volition in experimental psychology.

Cowan's article, *An Experimental Definition of the Criminal Mind*, in the second section is perhaps the most challenging of all the essays in its contention that criminal law should base its procedure on a purely behavioristic psychology. The reviewer thinks he detects some fallacies in the arguments, but it is an interesting treatment. In the same section, Sheriff offers an interesting analysis of the current situation in morals, while Shryock's "Cultural Function of Religion" is a well based plea and coherent argument for the view

that culture decays when religion ceases to harmonize art, morals and science.

The two essays on music in the section on Aesthetics support from that particular art Singer's view that the universal function of all good art is to create the creative mood in the spectator.

Although there are significant remarks on Aristotle and ancient science in Professor Smith's "Postulates of Empirical Thought," the most interesting of the essays to readers of CLASSICAL WEEKLY are Nahm's "Ateleological Theories of Aesthetic," Gordon H. Clark's "ΦΑΝΤΑΣΙΑ in Plotinus," and the late Professor Husik's "The Categories of Aristotle." The first gives an excellent critical survey of "formal" theories in aesthetics, and is valuable for the classical student in the interesting sidelights it throws on Plato and other great historical figures who sought the "pure form" of beauty. Incidentally, of course, formalism is rejected for a functional interpretation of art, in accordance with Professor Singer's views. The historical material is of value, however, apart from the arguments.

Clark's article on Plotinus gathers together the various passages in which the great Neo-Platonist treats of fancy or imagination, and tries to determine more accurately the exact place that this conception plays in his philosophical system. If the result is somewhat unsatisfactory, it is because, as the author points out, Plotinus himself made a far from unambiguous use of the term.

By far the most scholarly of the essays is Professor Husik's discussion of the "Categories" of Aristotle. The editors have coördinated two articles published by Husik on the subject, one in 1904 and the other in 1939. Their purpose, as stated, is "to make available to Aristotelian scholars a contribution of importance"; and such a contribution it certainly is. Were it not that we moderns are fearful of too dogmatic expressions, one would say that Husik "proves up to the hilt" the authenticity of this Aristotelian work on which so many doubts have been cast in the past. He certainly offers very strong arguments, showing the groundlessness of the various objections to the "Categories," and the consistency of the doctrine of that work with other works of Aristotle, notably the "Topics." Anyone interested in Aristotle should study this article, if he has not previously read the two published in philosophical magazines.

All the essays are of interest, and most of them show the influence of Professor Singer's own close logical reasoning, behaviorism, and "empirical idealism." On the whole, the pupils appear to have remained very faithful to the method and teaching of the master. The three essays which are of most interest to the classical scholar are, however, just those which do not bear too heavily the imprint of Singer's philosophy.

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## ABSTRACTS OF ARTICLES

This department is conducted by Dr. Charles T. Murphy of Princeton University, Princeton, New Jersey. Correspondence concerning abstracts may be addressed to him.

## ART. ARCHAEOLOGY

*Forty-Fourth General Meeting of the Archaeological Institute of America.* Summaries of papers submitted by the authors.

AJA 47 (1943) 88-101 (Walton)

BRENDEL, OTTO. *Three Archaic Bronze Disks from Italy.* The bronze disks in the City Art Museum of St. Louis belong to a "distinctly provincial, fairly rare and independent group of early Italic fabrics," of which a number of specimens were listed in Marconi's survey of Orientalizing art in Picenum. The two smaller pieces were probably breast and back plates of a style of armor now familiar from the "Warrior of Capistrano," and the larger disk may have formed the 'umbo' of a leather shield. Stylistically, the disks show the influence of the Cretan bronze "shields" and of the Orientalizing monsters of Protocorinthian and Rhodian works. But in the isolated development which has taken place the foreign motives have been greatly modified, with the trend always "against structural and organic form and toward the fantastic." The disks may perhaps be assigned to the second half of the seventh century, and to some relatively isolated area such as Picenum. Ill.

AJA 47 (1943) 194-208 (Walton)

CROSBY, MARGARET. *A Silver Ladle and Strainer.* The ladle bears the graffito 'Αρχιφάω κύαθος, and though made for private use, closely approximates the official Attic standard of liquid measure. The strainer is unique in having a rim in the shape of a vine leaf. Both objects belong to the latter part of the fourth century or to the early third century. Ill.

AJA 47 (1943) 209-16 (Walton)

DOHAN, EDITH HALL. *An Italiote Krater in the University Museum, Philadelphia.* A column-krater, purchased by the Museum in 1940, falls late in the series of Italiote vases which preceded the mass production of Apulian ware. The obverse has an unusual scene of departure, in which a horse is being fed or watered prior to the start. Ill.

AJA 47 (1943) 171-3 (Walton)

STEVENS, GORHAM P. *The Curve of the North Stylobate of the Parthenon.* Argues that the curve was a parabola, in support of Penrose (*Principles of Athenian Architecture*, 1851), and in opposition to C. Caratheodory (*Ἀρχαιολογικὴ Ἑφημερίς*, 1937, 120), who believes it was the arc of large circle. Ill.

Hesperia 12 (1943) 135-43 (Durham)

WHITTEMORE, THOMAS. *Archaeology during the Republic in Turkey.* A survey of the extensive work in exploration, excavation, development of museums, and the study and preservation of monuments carried on by Turkish and foreign scholars in the last twenty years. Interest has not been limited to one period, and work has been done on Hittite, Classical, Early Christian, Byzantine, and Turkish antiquities.

AJA 47 (1943) 164-70 (Walton)

## LINGUISTICS

RICHARDSON, L. J. D. *Notes II, The Fish Remora.* Pliny, Nat. Hist. 32.1.1. The word has been changed by modern editors to 'mora', because of etymological difficulty; not found in Lewis and Short, or Walde. The derivation from an original \*remimora is suggested,

"one that detains the oarage," contracted by haplology to 'remora'; cf. 'semimodius' and 'semodius'; cf. also the Greek ἐχέμησις, "detrainer of ships."

Hermathena 60 (1942) 79-80 (Taylor)

TOD, MARCUS N. *Lexicographical Notes.* Notes prepared during work on the new edition of Liddell and Scott, chiefly words found in inscriptions, some deliberately omitted or discovered too late for inclusion. Continued from Hermathena 59. Α-Ω.

Hermathena 60 (1942) 16-37 (Taylor)

## HISTORY. SOCIAL STUDIES

GARSTANG, JOHN. *Hittite Military Roads in Asia Minor. A Study in Imperial Strategy, with a map.* Taking due account of the permanence and limited number of main roads in Anatolia, G. draws on the evidence of names, sites, and topographical indications in the texts to trace the vital life-lines in the Hittite imperial scheme. This method enables him to localize a number of Hittite cities or fortresses whose names appear in the texts, and so to bring out the significance of the military exploits described. A preliminary chapter sets forth the rivalry between the inland and alpine Hittites with the kingdoms which blocked them from the sea: Arzawa to the southwest, Kizzuwadna to the southeast, and Azzi-Hayasa to the northeast. In successive chapters he traces Mursil's penetration of Arzawa, the disruption of Azzi-Hayasa, the frontier of Gasga under Hattusil, and Subbiluliuma's route towards Harran. Ill.

AJA 47 (1943) 35-62 (Walton)

GREEN, CHARLES. *Glevum and the Second Legion.* From the size of the settlement, the military remains, coins, pottery types, the conclusion is drawn that Kingsholm, of Gloucester, was the site of the semi-permanent fortress established by Ostorius and occupied by Legio II Augusta from 49 to 75 A.D. Shortly after the transfer of the second legion to Caerleon, the ferry settlement outside Kingsholm, Glevum, was made a colonia for veterans from Caerleon.

JRS 32 (1942) 39-52 (Reinmuth)

HENDERSON, M. I. *Julius Caesar and Latium in Spain.* Argues for an Augustan date for the formulae provinciarum, the lists of towns and indications of their municipal status, given by Pliny (NH 3.6-30; 4.110-118). From an examination of the titles of towns and ancillary evidence, coupled with the dating of Pliny's formulae, he concludes that the Latinization of Hispania Ulterior before Vespasian was due to Julius Caesar, while in Hispania Citerior Augustus was largely responsible. Caesar's interest in Ulterior is to be explained by his official interest there, and by the attachment of Citerior to Pompey.

JRS 32 (1942) 1-13 (Reinmuth)

MOMIGLIANO, ARNALDO. *'Terra Marique.'* The descriptions of the Romans as γῆς καὶ θαλάσσης σκῆπτρα καὶ μοναρχίαν λαβόντες in Lycophron's Alexandria represents Rome at about 273-2 B.C., when, having defeated Pyrrhus, it could, with the help of the Carthaginian fleet, which then was prepared to cooperate with Rome, have made her power felt on land and sea, specifically against Macedon, representative of Europe, as Rome in Lycophron's concept represented Asia. The Augustan formula, 'terra marique pax,' exalted peace rather than the peace-maker and, incorporating a development of ideas from Roman, Hellenistic and Jewish-Christian thought, was the justification of Roman rule.

JRS 32 (1942) 53-64 (Reinmuth)